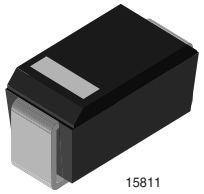
Fast Avalanche SMD Rectifier

Features

- Glass passivated junction
- Low reverse current
- Soft recovery characteristics
- Fast reverse recovery time
- Good switching characteristics
- Wave and reflow solderable



Applications

Surface mounting
Fast rectifier
Freewheeling diodes in SMPS and converters
Snubber diodes

Parts Table

Part	Type differentiation	Package
BYG21K	V_R = 800 V @ I_{FAV} = 1.5 A	DO-214AC
BYG21M	V_R = 1000 V @ I_{FAV} = 1.5 A	DO-214AC

Absolute Maximum Ratings

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Part	Symbol	Value	Unit
Reverse voltage = Repetitive peak reverse voltage		BYG21K	$V_R = V_{RRM}$	800	V
		BYG21M	$V_R = V_{RRM}$	1000	V
Peak forward surge current	t_p = 10 ms, half sinewave		I_{FSM}	30	A
Average forward current			I_{FAV}	1.5	A
Junction and storage temperature range			$T_j = T_{stg}$	- 55 to + 150	°C
Pulse energy in avalanche mode, non repetitive (inductive load switch off)	$I_{(BR)R}$ = 1 A, T_j = 25 °C		E_R	20	mJ

Maximum Thermal Resistance

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Part	Symbol	Value	Unit
Junction lead	T_L = const.		R_{thJL}	25	K/W
Junction ambient	mounted on epoxy-glass hard tissue		R_{thJA}	150	K/W
	mounted on epoxy-glass hard tissue, 50 mm^2 35 µm Cu		R_{thJA}	125	K/W
	mounted on Al-oxid-ceramic (Al_2O_3), 50 mm^2 35 µm Cu		R_{thJA}	100	K/W

Electrical Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Part	Symbol	Min	Typ.	Max	Unit
Forward voltage	I_F = 1 A		V_F			1.5	V
	I_F = 1.5 A		V_F			1.6	V
Reverse current	$V_R = V_{RRM}$		I_R			1	µA
	$V_R = V_{RRM}$, T_j = 100 °C		I_R			10	µA
Reverse recovery time	I_F = 0.5 A, I_R = 1 A, i_R = 0.25 A		t_{rr}			120	ns

Typical Characteristics (Tamb = 25 °C unless otherwise specified)

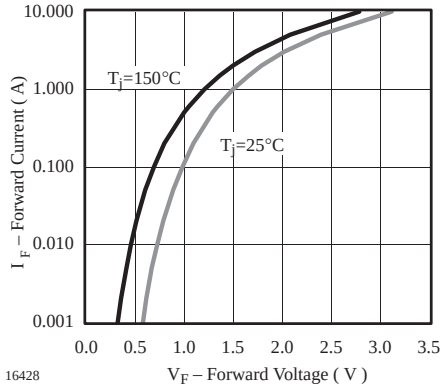


Figure 1. Forward Current vs. Forward Voltage

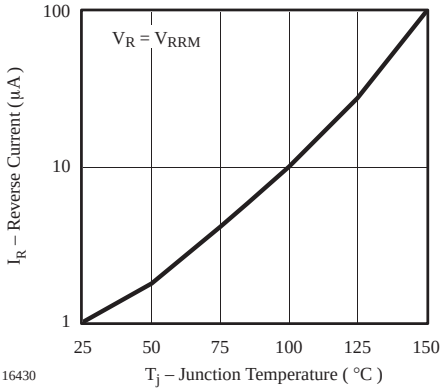


Figure 3. Reverse Current vs. Junction Temperature

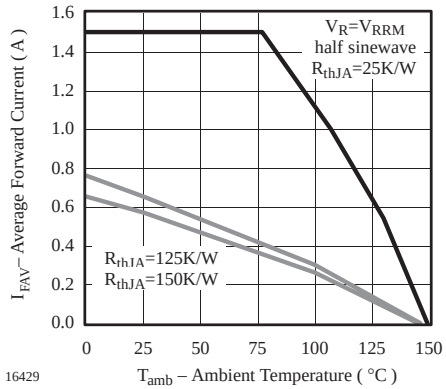


Figure 2. Max. Average Forward Current vs. Ambient Temperature

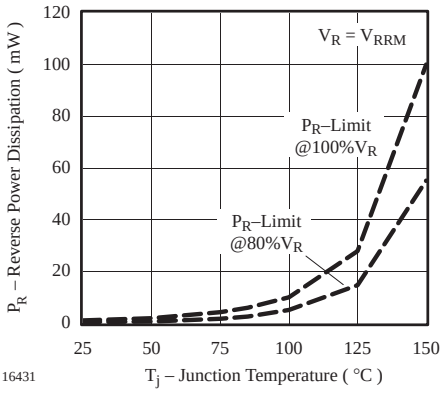


Figure 4. Max. Reverse Power Dissipation vs. Junction Temperature

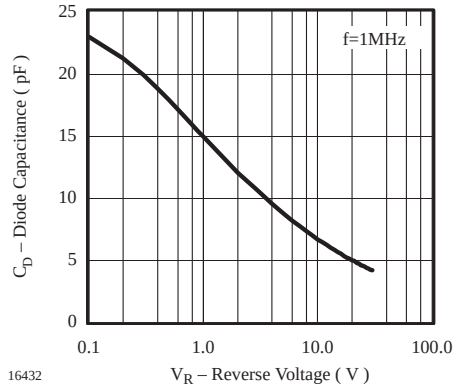


Figure 5. Diode Capacitance vs. Reverse Voltage

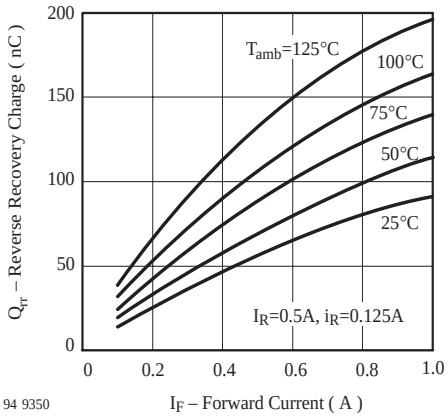


Figure 6. Max. Reverse Recovery Charge vs. Forward Current

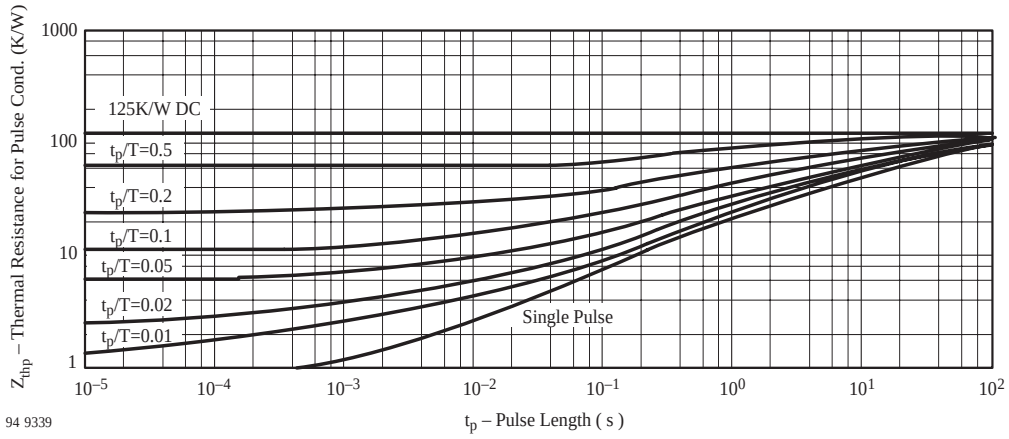
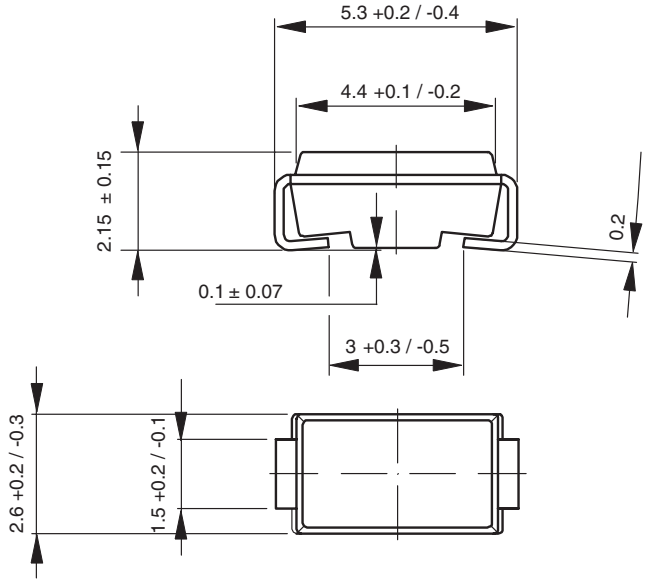


Figure 7. Thermal Response

Package Dimensions in mm



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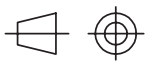
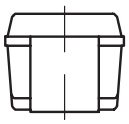


ISO Method E

technical drawings
according to DIN
specifications



Plastic case JEDEC DO 214
similar to SMA
Cathode indicated by a band

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